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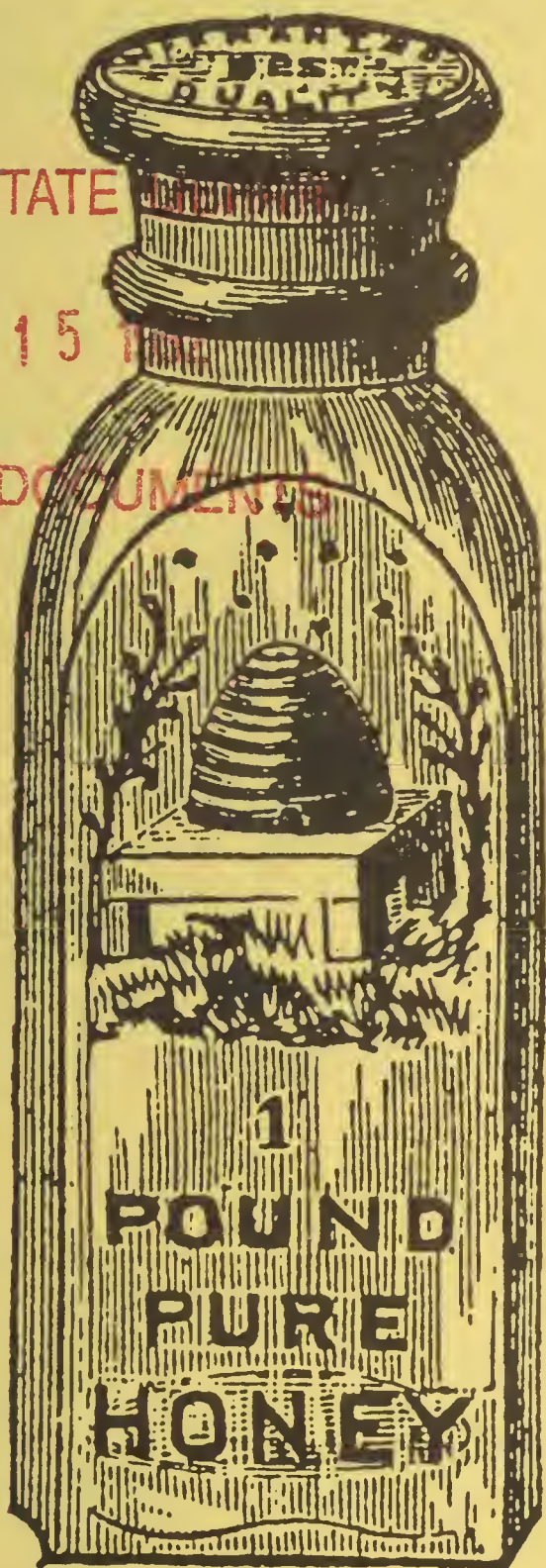
# HONEY

## The Natural Sweetener

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# HONEY

## The Natural Sweetener

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Honey is a pure, natural sweetener prepared by bees from nectar collected from wild and cultivated flowers. When bees have access to large areas of one kind of flower, such as clover, basswood, or goldenrod, they produce honey with a flavor and color typical of that particular plant. Bees also make natural blends of nectar from many different flowers in areas where no one flower predominates. Honey is also blended during packing to produce a pleasing taste combination that can be duplicated throughout the year and in different years.

Honey flavors range from mild and bland to strong and pungent. The color of honey ranges from black to white but is most often a golden color. By trying different honeys, you can find the ones you enjoy most. You may prefer one kind in baked goods and another on your morning toast or cereal. Generally, the mild-flavored honeys are most suitable for cooking.

The most common honeys available by floral source in Illinois are clover; sweet clover; soybean (usually blended by the bees with clover and labeled as clover); basswood; cranberry; and fall flowers, including aster, goldenrod, and Spanish needle. Blends and mixed floral sources are usually not labeled as such.

## Types of Honey

To make honey from nectar, honey bees evaporate much of the moisture and add compounds called enzymes that change the composition of the nectar. Some of the complex sugars are broken down into simpler ones, and some of the sugar is converted into an edible acid called gluconic acid. This process helps to give honey its distinctive taste.

When the moisture content of the honey being processed by the bees reaches about 17 percent, the bees fill the small cells of the comb with honey and seal them with a white beeswax capping. We can then remove the sealed combs from the beehive to use them on our table as comb honey. You can often purchase large combs of honey from beekeepers. Smaller combs, in wooden frames called



sections, are available from beekeepers and at food stores. These suppliers may also sell small portions of comb packed in plastic boxes. Chunk honey, consisting of pieces of comb and liquid honey, is also available. Comb honey is a wonderful spread for bread, toast, biscuits, and rolls. Because it is unprocessed, none of its delicate flavor has been changed or lost. You need not worry about eating the wax with the honey because beeswax is a completely wholesome product.

Honey without the wax comb is prepared by cutting off the wax cappings and whirling the comb in a honey “extractor,” where centrifugal force moves the honey out of the cells. This extracted, or liquid, honey is bottled or canned for sale. Liquid honey eventually crystallizes or granulates and may become completely solid. This natural process can be used to make a smooth honey spread called creamed honey.

To make creamed honey, blend one part *finely granulated* honey with nine parts liquid honey. Store the mixture at 57°F (13°C) until it becomes firm. If you do not have access to finely granulated honey, you can purchase commercially creamed honey and blend it with liquid honey. The mixture should be stored in a refrigerator or other cool place until it sets.

To reliquefy naturally granulated honey, put the container in a double boiler or some other water bath at about 145°F (63°C). Loosen or remove the container lid and stir the honey once or twice while it is heating. As soon as the granules are dissolved, remove the honey from the heat and let it cool as quickly as possible.

## Storing Honey

Both liquid honey and comb honey should be stored properly to maintain their quality. For home use, keep honey covered and store it in a dry location at 70-75°F (21-24°C). Honey tends to absorb moisture, which can lower its quality; the higher the temperature at which honey is stored, the more likely it is to be damaged. For long-term storage, keep both liquid and comb honey in a freezer

at 0°F (-18°C). The comb honey should be enclosed in plastic before it is put into the freezer, and allowed to warm to room temperature before it is opened. Even at room temperature, honey gradually becomes a darker color and changes flavor and composition. Differences can be seen in less than one year. Freezing stops such changes almost completely and preserves all the natural goodness of the honey.

Only finely crystallized or creamed honey should be kept in a refrigerator or in similar cool locations. Refrigerator temperatures cause honey to granulate very quickly.

When unheated honey granulates, the sugar-tolerant yeasts, which are always present in honey, may ferment the liquid portion and make the honey inedible. To prevent such changes, you must store unheated, granulated honey and unheated honey containing more than 17 percent moisture at temperatures below 50°F (10°C). Heating honey to 145°F (63°C) for half an hour kills the yeasts and prevents loss of honey from fermentation. Carefully controlled heating does not damage the honey. Do not, however, try to heat comb honey.

## Honey in Cooking, Canning, and Preserving

When using honey in baking, you can replace up to 1/2 cup of sugar in a recipe without making other changes. You can also replace one cup of sugar with one cup of honey if you then reduce the liquid in the recipe by 1/4 cup. The resulting product may be unsatisfactory if you replace more than one cup of sugar with honey. To prevent excessive browning, lower the baking temperature by 25°F (14°C) for all baked goods in which you have substituted honey for sugar. Recipes designed and tested with honey as the sweetener are most likely to give satisfactory results.

To measure honey more easily, wet or oil the warm cup or spoon that you intend to use. A rubber spatula is also helpful in removing honey from such utensils. A jar of honey weighing 12 ounces equals one standard 8-ounce measuring cup in volume. There are 4 cups in a 3-pound

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jar or can of honey. Five pounds of honey measure 6-2/3 cups in volume.

Syrups, jams, and jellies made with honey foam more when cooking than those made with sugar. Be *sure* that your container is large enough to contain this extra volume during the cooking process. Use a mild-flavored honey in syrup for canning. A strong-flavored honey or too much honey may mask the flavor of the fruit. Test a small batch before canning a large quantity.

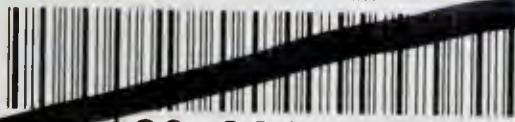
## Syrup Mixtures Suitable for Canning with Honey

	Proportions (cups)	Yield (cups)
<i>Light syrup</i>	1 honey, 1 sugar, 4 water	5-1/2
	1 honey, 3 water	4
<i>Medium syrup</i>	1 honey, 2 sugar, 4 water	6
	2 honey, 2 water	4

## The Composition of Honey

Component	Percent
Water	17.2
Sugars:	
Fructose	38.5
Glucose	31.0
Sucrose	1.3
Others, including maltose	8.8
Acids, including gluconic, citric, malic, succinic, formic, acetic, and others (average pH of 3.9)	1.0
Proteins	
Ash or minerals	
Minor components, including enzymes, vitamins, pigments, flavor and aroma substances, sugar alcohols, and tannins	2.2

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# Safety of Honey

Infants under one year of age should not be fed honey. Honey sometimes contains bacterial spores that may produce a toxin in the infant's intestines causing infant botulism, a severe paralyzing illness that affects only babies. Honey is safe for older children and adults because the botulism spores cannot grow in their mature intestines.

## Sources of Recipes

Honey cookbooks are available in bookstores, in local libraries, and from beekeepers' associations and bee supply companies.

*Honey adds a touch of elegance to your table. Take advantage of its natural goodness and variety of flavors to brighten your days.*

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